REPORT AND APPRAISAL

ON THE

VALUE OF THE PHYSICAL PROPERTIES

OF THE

BROOKLYN RAPID TRANSIT COMPANY

STREET RAILWAY SURFACE LINES

BY

BION J. ARNOLD

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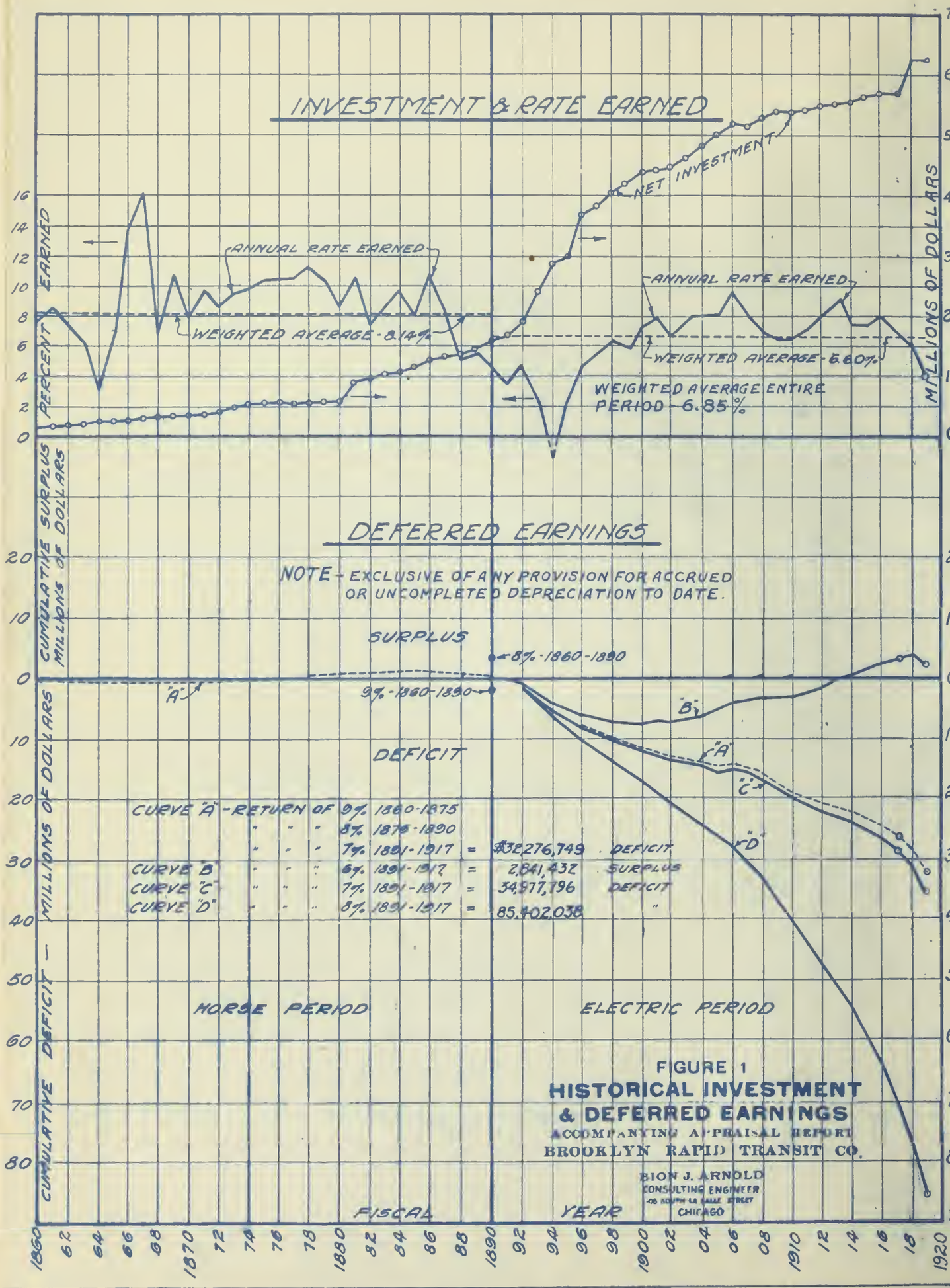
INVESTMENT & RATE EARNED
PERCENT EARNED
MILLIONS OF DOLLARS
NET INVESTMENT
ANNUAL RATE EARNED
WEIGHTED AVERAGE - 8.14%
ANNUAL RATE EARNED
WEIGHTED AVERAGE - 6.60%
WEIGHTED AVERAGE ENTIRE PERIOD - 6.85%
DEFERRED EARNINGS
NOTE - EXCLUSIVE OF ANY PROVISION FOR ACCRUED OR UNCOMPLETED DEPRECIATION TO DATE.
CUMULATIVE SURPLUS MILLIONS OF DOLLARS
SURPLUS
8% - 1860-1890
9% - 1860-1890
"A"
"B"
"A"
"C"
"D"
DEFICIT
CUMULATIVE DEFICIT - MILLIONS OF DOLLARS
CURVE "A" - RETURN OF 9% 1860-1875
" " " 8% 1875-1890
" " " 7% 1891-1917 = $32,276,749 DEFICIT
CURVE "B" " " " 6% 1891-1917 = 2,841,432 SURPLUS
CURVE "C" " " " 7% 1891-1917 = 34,977,196 DEFICIT
CURVE "D" " " " 8% 1891-1917 = 85,402,038 "
HORSE PERIOD
ELECTRIC PERIOD
FISCAL YEAR
1860 62 64 66 68 1870 72 74 76 78 1880 82 84 86 88 1890 92 94 96 98 1900 02 04 06 08 1910 12 14 16 18 1920

FIGURE 1

HISTORICAL INVESTMENT & DEFERRED EARNINGS

ACCOMPANYING APPRAISAL REPORT

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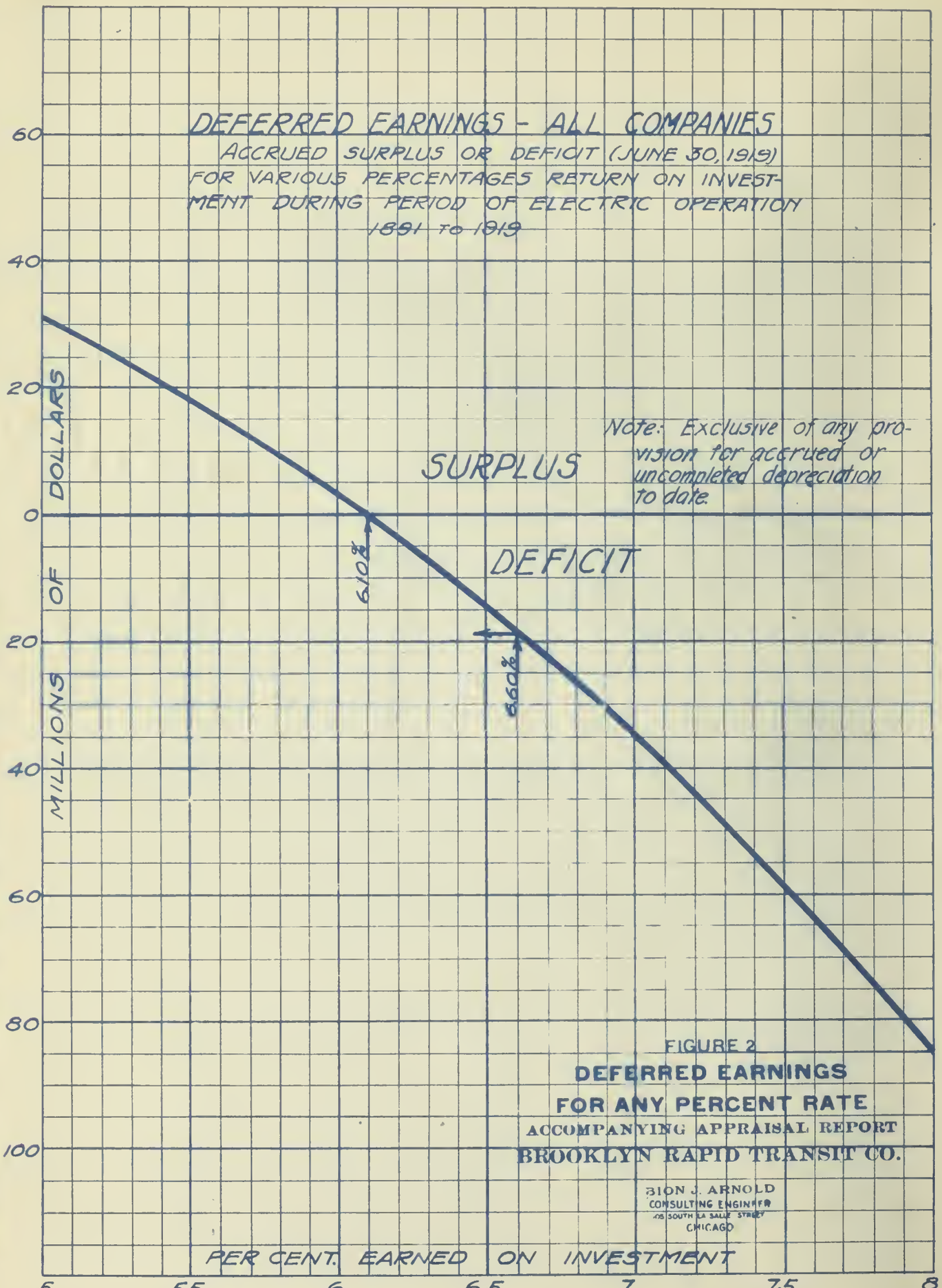

FIGURE 2

DEFERRED EARNINGS

FOR ANY PERCENT RATE

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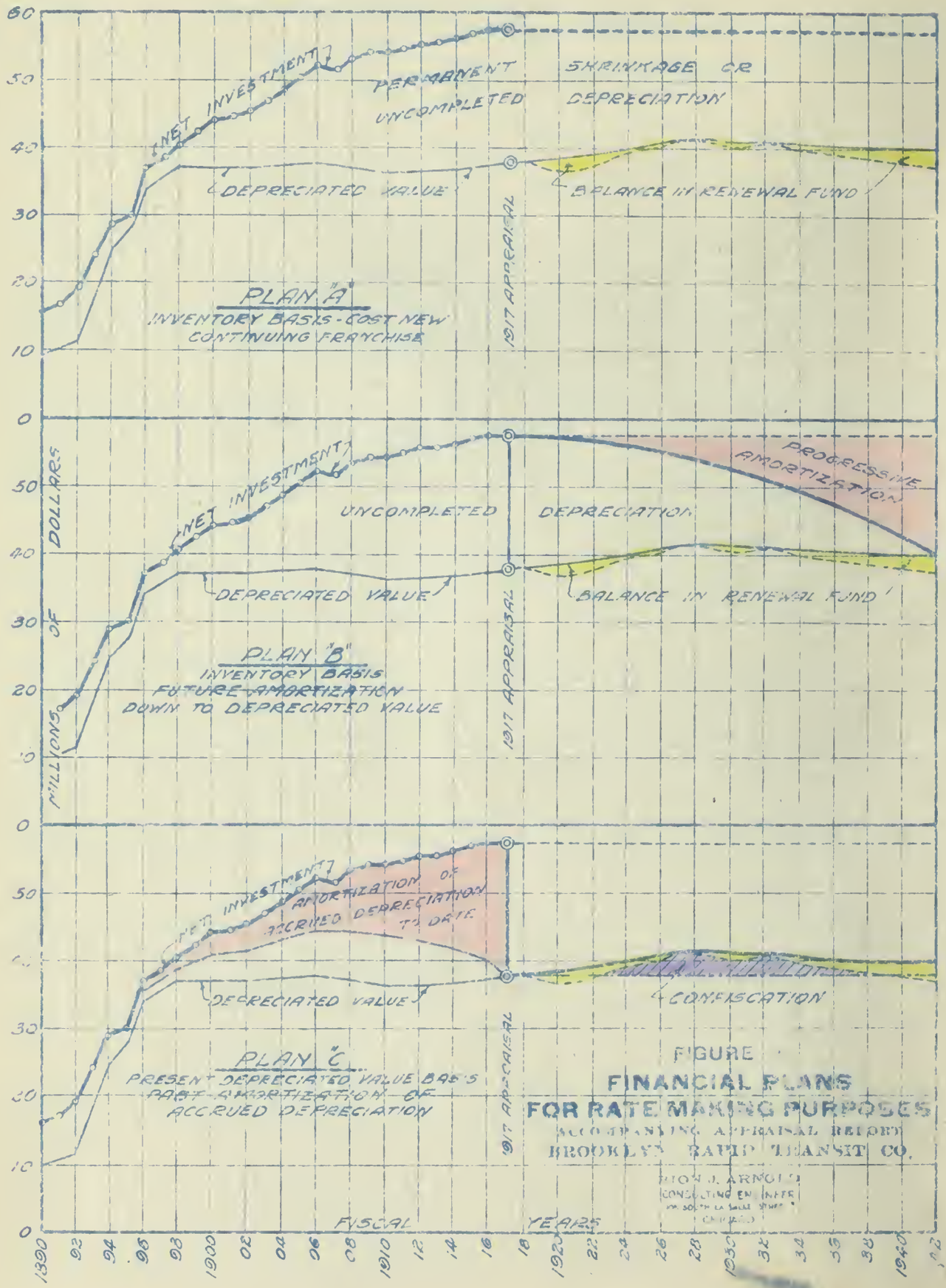

FIGURE

FINANCIAL PLANS

FOR RATE MAKING PURPOSES

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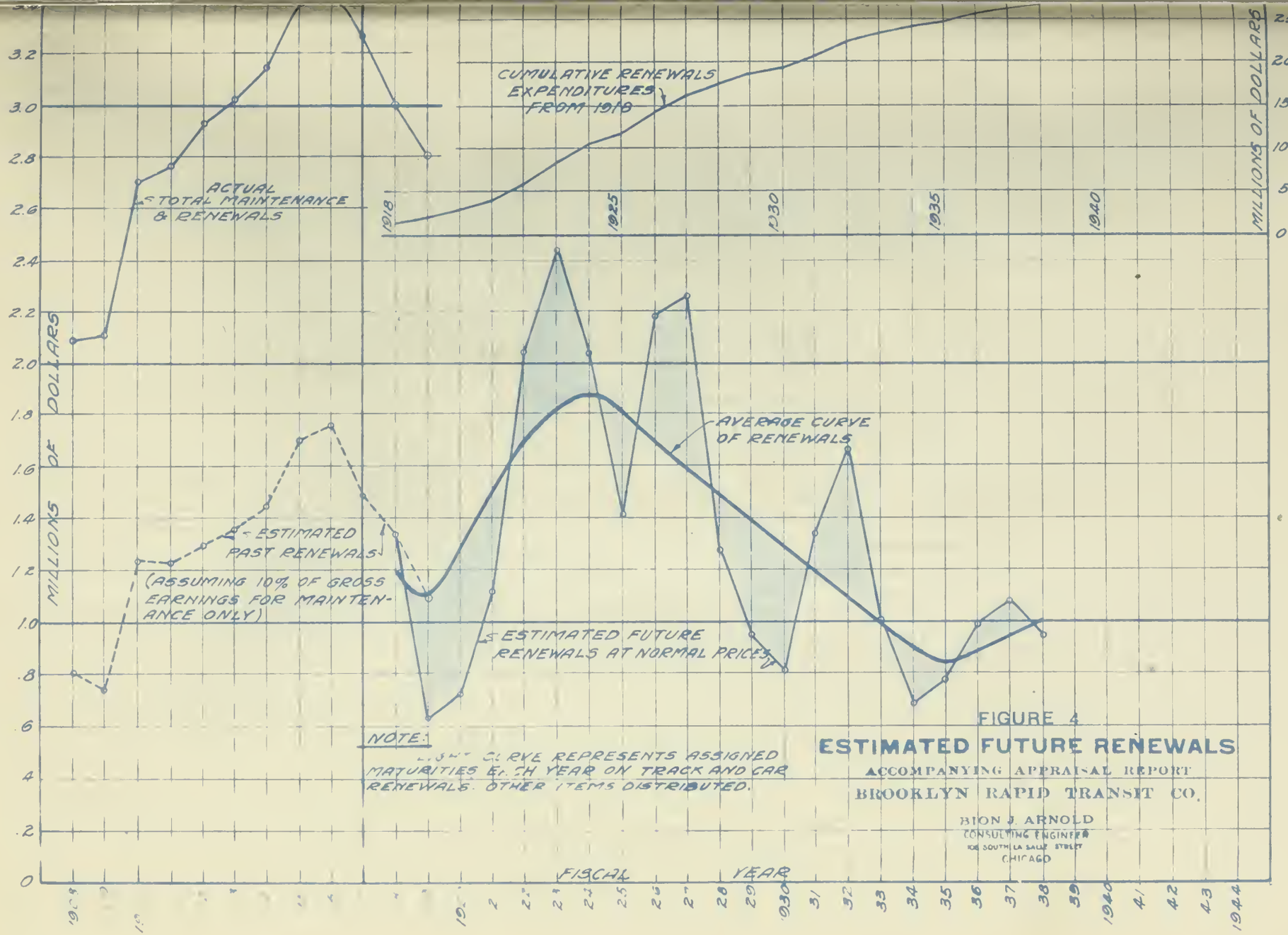
CUMULATIVE RENEWALS EXPENDITURES FROM 1918
ACTUAL TOTAL MAINTENANCE & RENEWALS
ESTIMATED PAST RENEWALS
(ASSUMING 10% OF GROSS EARNINGS FOR MAINTENANCE ONLY)
AVERAGE CURVE OF RENEWALS
ESTIMATED FUTURE RENEWALS AT NORMAL PRICES
MILLIONS OF DOLLARS
FISCAL YEAR
NOTE: LIGHT CURVE REPRESENTS ASSIGNED MATURITIES EACH YEAR ON TRACK AND CAR RENEWALS. OTHER ITEMS DISTRIBUTED.

FIGURE 4

ESTIMATED FUTURE RENEWALS

ACCOMPANYING APPRAISAL REPORT

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Explanation of Figure A:

Net current annual capital benefit.

The [illegible] curve [illegible] the money [illegible] that can be annually expended for maintenance and renewals under the accounting classification instituted by the Public Service Commission.

The dotted curve immediately below represents the allowable annual expenditures based upon the depreciation [illegible] of the gross earnings that currently expended for maintenance only.

The present value, extended into the future, represents definite physical properties on the account of [illegible] expenditures as of each year. This difference is found when the foregoing maintenance and renewals reserve [illegible] the depreciation accruals indicated in the schedule. Other property items are correspondingly discounted.

If these present properties could be acquired so as to [illegible] each of the expenditures of the [illegible] made, a curve representing the [illegible] would result, varying approximately between $1,000,000 and $ [illegible] per year a [illegible].

The [illegible] curve indicates the [illegible], [illegible] necessary to meet future [illegible] as [illegible] [illegible], averaging about $1,500,000 per year.

It is important to note that these renewal properties are computed on a basis of current prices for reconstructing materials and labor as used in this [illegible]. At present no actual policy, the money expended for the same physical reconstruction would have to always greatly [illegible] amounts [illegible] and if the gross earnings increase in the same ratio the percentage reserve would probably [illegible] [illegible] to maintain [illegible].

The depreciation [illegible] presently in use [illegible] in this [illegible] country.

Interpretation of Historical Records

Notwithstanding the foregoing very brief review of findings, the remaining parts of this report present an interpretation of these findings as affecting the "real" value for ratemaking purposes.

The facts revealed by the historical study particularly, are believed to be essential for sensible appraisal purposes.

1. Historical record of investment and fluctuations.

Figure 1 reveals the complete record of past expenditures (see explanatory text). Attention is called to the fact indicated by Curve A, that, from the beginning of public use operation in 1910, the average age (net investment per dollar only 6.6% percent of the actual net cash investment) from year to year without any provision whatsoever for allowing accrued depreciation or other forms of accumulation for which was not sufficient net income earned to establish and maintain, particularly during the formative period.

Cost income is often used as the balance after operating expenses, maintenance, renewals, and taxes, available for interest on the investment (fixtures and dividends), reserves for amortization, contingencies, etc., and surplus. In other words, no deductions from earnings have been made in the past for such reserves and any amortization would, therefore, increase the accrued rate derived by about one percent or more, according to the amortization rate used.

c. Actual Depletion Charges

On account of the inability of the electric utility companies to earn the full amount of their depletion charges in earlier years, and the possibility of incurring losses similar to those in future years, the Commission has allowed in lieu of depletion charges an amount equal to the net income of these companies, including interest on equity capital but without provision for any form of amortization. This is indicated on the solid line of adjustment curve Figure 2. Showing the cumulative amounts of deficits during electric operations for all the average income rate earned on the investment (excluding allowance for depreciation reserve).

d. Income Rate Earned:

It will be seen from Figure 2 that, in intervals between years during, corresponding to low or no dividends, the net earnings for the period was 6 to 7 percent. Therefore,

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[illegible] report, however, differs from a similar presentation of cost to [illegible] in accordance with investor viewpoint, and it is predicated upon the following premises, which are believed to embody real fairness and equity in the relations of public and corporations:

First. That a unified steam railway property fully developed to the point of maximum efficient operation and upon which the community must rely for its major transportation service, should be considered as a public necessity, a "going" property and a continuing investment and should not be subjected to the risk of secondary, permanent or "fictitious" by reason of temporary disabilities such as created by the war.

Second. That utility rates or rates should be sufficient to insure to the investor a fair rate of return (based on the current cost of money) on the actual investment in the property useful in rendering the service, when such property has been honestly and efficiently built and managed.

Third. That authorized rates should be sufficient over and above such fair return to the investor, to insure permanently the physical integrity of the property through the necessary means, including such treatment of the item of accrued depreciation as warranted by the conditions of the [illegible] case.

Underlying these premises, there are still other assumptions at the base. While some may be controlling, all have more or less bearing:

(i) Nature, character, duty and present condition of the properties, especially as affected by such things as may be seen.

(j) Corporate policy with respect to proper maintenance and rehabilitation and regulation effects of active management of mineralize independent of connecting properties.

(k) Liability of communities served and future traffic possibilities in view of rapid transit construction, change in traffic movements and demand for extensions.

(l) History and trend of public policy and regulation and actual and probable requirements due to growth and depression.

(m) Contractual and tenancies rights held by and transmitted from predecessor companies, and terms of existing operating contracts.

(n) Values originated by the Public through taxation, and considerations made by the Company in various forms of leases, such as service, change of grade, track removal and street cleaning.

(o) Status of existing and prior elevated construction for companies were legally organized and operated.

15. Contractual Relations and Financial Terms:

This situation as later detailed in Exhibits I, concentrates the properties under substantially original conditions, without applying the principle of substitute plant (i.e., without reconciling the property with latest standard value to the same work as the older equipment exists); necessarily, therefore, actual contractual relations between the companies and with the municipalities are preserved. In fact, the properties are valued upon a basis of concessionary power and contract relationship. Both franchises and leases of construction are for long periods, and the records of recent operations likewise extend many years into the future. These

economic consequences. Investment gives birth to liquidity and to bank failure and economic depression, whereas the appropriation relates a transaction concerning is specifically determined. They are treated each for and and given attention or interest which might be profitable in the creation of an entirely new economy.

It is the specific duty of a utility, when legally authorized to secure a commodity and when precluded from unjust and unreasonable competition, to provide the necessary capital and reasonable at service, in accordance with the ordinary needs of the public. In return therefor the public assumes the duty of providing for the cost of the service used, and of reasonably supporting the investment. If a long franchise tenure is considered, considerable income may attach the property, at various times, the economic policy of the system to account past errors of judgment and to anticipate the future as far as possible. But with a short or uncertain franchise tenure, this freedom of action is lost, the investor's risk is increased; and the cost of new money rises as confidence in the future disappears.

Permissive use, in effect, be terminated although still legally in force, thus only the moral responsibility between the contractual parties remains. But again it is contended that this relation report is based upon an over-simplistic viewpoint, it frankly assumes the protection of the investment and the continuance of the contractual relations existing as of date of appraisal.

On the other hand, if an entirely new set of con-

utilities were involved, including segregation of the securities into their component parts with competitive operation secured. Preservation of the investments through public regulation would largely disappear. Any large property so segregated will be found to have certain unprofitable lines. The same applies to various periods of past development, some of which have been profitable, others distinctly unprofitable. In such an event, unrealized values would necessarily be higher by reason of piece-meal construction, investor organization and development costs, and particularly, the part of money due to the higher return thereon necessitated by the increasing risk.

So long as the property was not over-built, inadequately or improperly located, or inefficiently or illegally did not appear in the management or regulation thereof, utilities undergoing development as rapid as that of the electric railways ought justly to be able to anticipate a future which through increasing traffic density will insure to the investor an ultimate return for the use of his money and will reasonably absorb losses of early operation and extraordinary development.

In the absence of such future stability as should result from public regulation, there is only one alternative open to the investor from the economic viewpoint, viz., to assess a fund which, at the end of the corporate tenure of the property, should guarantee to the investors repayment of the principal of their actual investment. And this leads to a final statement of the problem of Accrued Depreciation in Valuation for rate-making purposes.

74. Financial Plans for Reproducing Corporate:

In order to make clear the theory which lies beyond the term of Accrued Depreciation will have, Figure 5 visualizes three typical financial plans applying in different ways the fundamentals of this appraisal and presenting the operations of the properties, past, present and future, in a connected manner. Again, it is emphasized that the three elements (1) basic value, (2) the rate computed upon that value, and (3) disbursements of income provided by such a rate (under the regulations imposed by the public authorities) are inseparable factors in any such financial plan.

It is urged that the problem of valuation not center only of speed, not of the immediate present only. In other words, to ignore a fair appraisement as of to-day, the "case of the test" should remain open until there have been full, considered the burdens imposed upon present and future generations by the past generation which accepted service at less than cost.

Referring first to Figure 5, the history of the Brooklyn Rapid Transit surface line properties is traversed linked up with the Appraised Value as of to-day, and the operations then continued into the future over a period covering the average expected life of the depreciable elements, assuming for simplicity no growth or extensions to the plant.

The uncompleted or Accrued Depreciation is seen to vary from a minimum at the close of the electrification period to a maximum in 1932-41, the latter due to the fact that no renewals will not fall due until that time. Therefore the

> should this reasoning prevail, what was our assessor against what value, one or two centuries or more from now, the depleted value and present riders be required to stumble into exchange for the benefit of future generations?

This presentation would simply result in transferring one-quarter of the property value from present ownership to the account of the future riding public if the property should be ultimately purchased at Depreciated Value.

Assuming as a basis of rates how actual investors have or feel how from year to year with adequate maintenance, plus a minimum allowance for the renewal fund built up out of rates that need be only sufficient to carry the property over the future renewal peak, as indicated, at which time the balance-in-fund would be practically exhausted, this future renewal liability is capable of fairly accurate determination, while an amortization annuity for assumed or probable demands entirely upon the period of time during which the amortization fund is or is to be built up; i.e., during the probable corporate tenure of the property.

Plan B assumes that corporate tenure definitely ends at a future date and that this liability would be satisfied by making present and future rates carry a definite amortization annuity, by which the "Official Purchase Price" of the property can be gradually reduced from Cost New to-day to Depreciated Value at expiration of the term. Then, at that date the Public could acquire the property at Depreciated Value and the corporate owners would receive their invested principal in full.

In this connection, the present government recently imposed the full burden of consolidation deficits from the past generation and also relieved the private sector entirely of all undue economic hardship. In the meantime, the borrowable owners, while having their investment literally validated, have been obliged to carry the risk coverage out the entire period.

In the case of a freeholder repurchase with deferred purchase clause, stipulating Depreciated Value (often confounded with the term "present value",) Plan 5 would be required in order to fulfill the mandate of the case.

A rigid application of the accounting principles enunciated by many courts and commissions, is of interest when if the property had been acquired since its inception or initially the same method of accounting for wasting assets as established in 1908 (or on subsequent occasions,) by the Public Service Commission, rates would always have covered, in full, both renewals (completed depreciation) and incurred depreciation (or unrecovered renewals.) In addition, rates ought to have carried a fair return on the actual investment from time to time; and the investment account would have been written down to the extent that property had disappeared from service through abandonment or use-up, but only to the extent that this writing-down had been done out of income accrued from these adequate rates established for that purpose. The considerations on which the "fair rates for ratemaking purposes" discussed in this report is based, therefore, seem logically and equitably sound in so far as the present accounting theories established by the Commission and presumably recognized by en-

[illegible considerations and remedy]

This is essentially the "pay as you" basis, each generation supporting the full cost of its own service including the progressive writings in property that make way for Posterity. This policy also involves cost due or investment cost as a rate-making basis if it be applied from the inception of the property and continued throughout its life.

PLAN C assumes the use of present day Depreciated Value as a basis of rates, involving a modification or partial abandonment of the investment principal as a capital burden on income.

Here is the crux of the problem. If it were possible to have reproduced at the inception of this service the state of mind generally prevalent today in considering Depreciated Value as a basis of rates, and at that time to have anticipated from it this, as the date when the new order would go into effect, it is clear that in reality the economic equation we do full justice to all concerned. An amortization fund supported by increased rates should then have been promptly established and built up through the intervening years in order to return the investors to-day that part of their principal now to be abandoned, not from service, but as an income producing investment. And through this period the rising public would have been paid the full cost of service. On this and no other basis, would part condition have been satisfied.

Future equities however cannot be satisfied away in this case. For an analysis of the probable renewal requirements for property now in existence shows that this policy will, in

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RECAPITULATION OF VALUES - APPRAISAL OF B.R.T. SURFACE LINES AS OF JUNE 30, 1917, ESTIMATED ON PRICE BASIS OF JUNE 30, 1914 -

Appraisal Exhibits	Classes of Property	Cost New Including Construction Overhead Less Construction Cost	Final Cost to Reproduce 1914	Cost New, 1917 Appraisal
I.	Track & Roadway	$ 9,990,683.40	$11,749,166.76	$12,000,419.82
II.	Paving	6,545,797.87	7,699,169.91	7,839,169.91
III.	Electric Line and Ducts	6,821,146.58	6,984,348.50	8,211,651.09
IV.	Buildings and Structures	5,906,549.53	6,996,313.11	7,818,783.86
V.	Power Plant & Substation Equipment	1,752,434.89	2,039,556.85	2,078,648.56
VI.	Rolling stock, including cars formerly owned by T.D.Co.	12,354,341.00	14,628,634.48	14,628,634.48
VII.	Shop Equipment	191,989.73	227,355.04	252,606.52
VIII.	Furniture and Fixtures	166,422.09	197,066.67	197,062.66
IX.	Miscellaneous Equipment	101,597.96	120,420.66	133,801.18
X.	Brooklyn Bridge Expenses	553,497.00	652,387.35	652,387.35
XI.	Uncompleted Construction	95,384.14	113,219.05	113,360.44
	Disconnected but useful track	14,427.00	17,017.51	17,364.46
XII.	Plant Development Expense:			
	Coney Island Improvement	300,242.00	300,242.00	300,242.00
	Track and Roadway	1,209,152.94	1,209,152.94	1,209,152.94
	Electric Line	208,278.65	208,278.65	208,278.65
	Williamsburg Bridge Expense	50,017.38	50,017.38	50,017.38
XIII.	Franchises: Consents and Damages	110,655.65	110,655.65	110,655.65
XIV.	Land Parcels, owned in fee	3,798,575.00	4,480,647.13	5,069,545.87
	Right-of-way	1,673,091.50	1,973,515.36	2,218,061.11
	TOTAL	$50,986,942.40	$59,697,810.75	$62,506,573.33

Note: Same corporate superchargee used for 1914 estimate as used in 1917 appraisal. See Vol. II.

SCHEDULE A - STATEMENT 26.
ANNUITIES, LOSSES ON PROPERTY RETIRED FROM SERVICE -
COMBINED COMPANIES

Fiscal Year.	Cost of Property retired from service.	Amount of loss charged by Company in expenses and surplus, or recovered from salvage.	Additional loss to be charged to operating expenses.
1891	$ 222,397	$ 6,650	$ 216,746
1892	247,821	34,714	213,107
1893	1,050,156	178,070	872,086
1894	2,008,904	193,814	1,815,090
1895	1,016,921	184,000	832,921
1896	794,775	50,741	743,934
1897	801,910	147,999	654,910
1898	666,191	111,982	541,209
1899	416,471	63,000	353,471
1900	726,004	145,476	592,528
1901	176,691	68,081	108,610
1902	308,269	148,788	159,481
1903	791,718	412,998	378,720
1904	610,011	171,060	438,951
1905	202,741	98,942	103,799
1906	252,660	88,671	64,189
1907	1,043,903	988,760	115,143
1908	87,163	167,818	85,184
1909	126,966	97,157	129,809
1910	263,898	206,998	106,899
1911	248,544	105,856	142,688
1912	139,392	42,048	97,344
1913	860,418	189,450	71,184
1914	301,807	277,210	24,597
1915	369,656	97,288	272,368
1916	275,196	125,353	149,843
1917	733,815	449,382	284,433
1918	207,583	156,409	50,984
1919	998,104	941,028	57,076
Totals,	$14,956,371	$5,268,882	$9,674,395

provision for, used $970,000 [illegible] loss or property aggregated. These items raised the above ratio figure of 15.77 percent to 16.6 percent of gross earnings, including taxes, charges to operating and surplus.

If the same plan had been followed prior to 1931 of charging to operation all loss or property accumulated in the past as has been done in the historical studies in obtaining net investment, the annual charge for total accrued losses would have averaged 20.18 percent of the average gross earnings. This last figure covers a loss of $9,673,383 from 1921 to 1931 which was not charged off by the companies but was deducted from net income in the historical studies.

If, now, 10% of the gross revenue is assumed as a fair and reasonable proportion which should have been expended for maintenance only, the total amount so expended through the period of electric operation was $37,568,977 *, exclusive of actual or estimated appropriations from surplus. On the basis of 10 percent maintenance, the weighted average amounts appropriated for (a) deferrals only, (b) renewals plus charges to surplus and (c) total with estimated loss on unprovided property during this period were as follows:

*Including Elevated expenditures because of difficulty of separating the Elevated maintenance.

Future requirements for property: An analysis of expected future renewals may not be made as an indication of the probable renewal liability of the future and the renewal policy which should have been established in the past.

After depreciation has physical property to the amount fully set forth in the provisions of the formula, it becomes possible to predict with reasonable accuracy the future renewal requirements for the entire property year by year and the annual funds necessary to meet these requirements. The process followed in arriving at the results presented in this schedule is to ignore the end of the life cycle of each class of depreciable property as determined from the depreciation schedules used as a basis of determining the depreciated value. The cost of renewing or replacing the existing value of each individual unit of depreciable property is then set down for the year when the renewal matures, at the original cost. Now the salvage value as appearing in the appraisal. This value that accompanies an item of depreciable property is removed, the cost thereof, less salvage realized from the replacement or the existing value, becomes a charge against operating expenses and income. In times of normal prices, this is equivalent to a renewal in kind, the accounting result of which would be that capital would remain stationary while the actual expense of the renewal would be borne out of income. Very frequently, however, renewals are made in the form of a renewal with betterment, as a result of which

[illegible] amounting to about $5,000,000 per annum

Sufficiency of Renewals Reserve: The renewal records of this study are in round numbers as follows:-

Cumulative renewal liability to 1927 (retrospective - 10 years,	$50,000,000
average per year	5,000,000
Cumulative liability on to 1937 (20 years,	50,000,000
average per year	2,500,000

These data indicate an average annual expenditure for renewals for the next ten years of about 0.8 percent of the 1917 gross earnings and a maximum average requirement of about 1.4 percent. For the next twenty years, the average annual requirement will probably be 0.5 percent. In view of these findings, it is considered safe to estimate for the purposes of this report appropriations of 2 and 1 percent respectively of the gross earnings to cover renewals and loss on abandoned property exclusive of straight maintenance repairs. This range, it is believed will indicate with sufficient exactness the relative sufficiency of the Company's reserve policy in the past with respect to provision for upkeep.

Is Renewal Reserve, Fifty Actual: On this basis of

It should be said however, that these estimates do not take into account the large increase in the price of future construction materials as compared with the prices paid in the past. And further, they reflect the results not of the future but of construction work done ten, twenty or thirty years before. In other words, renewal expenditures must always occur one full life period after the original construction. On the basis of present accounting, the exact original cost would be charged against the renewal fund. In this study, however, the appraisal values are considered, which may be somewhat more and occasionally less than the actual original cost, not known.

actual charges to operation and surplus in past years, as compared with the assumed 2.0 percent reserve, the apparent shortage was 1.5 percent of the gross earnings. If left unfunded this 1.5% additional reserve would have amounted to $4,680,000 by 1917 - i.e., during 22 years of full electric operation (1895 to 1917). Or if funded through this period of 22 years at four percent interest compounded semi-annually, the equivalent annuity which would have been required to provide $4,680,000 by 1917 would have been only 0.95 percent of the average gross earnings.

10% Renewal Reserve, 6% Actual. On this basis the apparent shortage would be 3.5 percent per year. If unfunded, this additional reserve would have amounted to $10,900,000 by 1917 or funded at four percent for 22 years, the same size of fund would have been produced by an annuity of 2.19 percent of the gross earnings through this period. However, this amount is very largely in excess of the estimated amount required over and above normal expenditures for renewals to meet the maximum renewal periods of the future, 1923 to 1929 inclusive, as shown by this renewal study. In fact, it is so much in excess as to have the effect of reducing the future drafts on earnings required for maintenance and renewals to an abnormally low figure.

It is apparent from the above computations that the assumed 10 percent average appropriations for renewals only, exclusive of the cost of electrification of old horse car roads, would have been excessive when applied over the entire

[illegible] renewal base. And in fact, even the 5-1 percent average would have provided more funds than actually required to meet the maximum renewal liability of the future. Such a fund if maintained would have been a compounding fund and therefore an additional reserve of a little less than one percent of the gross would probably have been ample instead of 2.5 percent.

Expressed in percent of the investment, it is found that the Wilmington average investment ratio during electric operation was 86.93 and $1.00 earned for the various physical properties, gas and electric, it took upwards [illegible] additional reserve of fifty percent of the gross earnings would have been sufficient to cover the [illegible] investment.

Adjustment of Renewal Charges, 1907 for Existing Gas and Renewals, 1911 Actual: The preceding deals with actual charges. However, as noted in the historical studies, the book accounts were then revised [illegible] to obtain "net actual investment". In this revision, the net investment all superseded property have accounts from capital and charges to renewals for the loss of superseded. Although most of this property superseded not only during the three war periods some of it was not yet worn to [illegible] and in fact has appeared through depreciation. Therefore, as adjusted the Renewal Account reflects a loss of an old property rather than a newly built one. These adjustment charges against renewals for superseded property, as above stated, amount to $3,673,263 between 1907 and 1919.

The average charges to maintenance and renewals [illegible]

[illegible] equivalent to [illegible] of the gross earnings. [illegible] practically a correct basis on which to approach the maintenance and [illegible] charges to results would vary [illegible] 3.25 percent.

It will now be evident that the actual cost, through the entire period, of bringing the horse car property to the present status of an electric property through the [illegible] period of electrification, has probably required a sum of about five percent of the gross earnings. If now the small annuity previously found for meeting the renewal liability on the future renewal peak (e.g., 0.90 percent of the gross earnings) be added to the [illegible] on earnings since new systems of cars have been necessary should more than enough be provided for all expenses including maintenance, renewals, loss on superseded property and future renewal liability. This amount is no bigger than the actual appropriation since 1911 which, if continued, would appear to be sufficient in view of the nature of the future renewal maturity curve, to meet the future requirements on a basis of normal prices, but quite insufficient for present prices.

In the light of knowledge and experience with other similar properties, it would appear that the accounting [illegible] needs above described pending in a total appropriation of 20 percent of the gross earnings represents fairly the measure of the problem of normal upkeep on the [illegible] properties, but it is also apparent that on its normal basis of income, the Company has practically reached its economic limit in the proportion for up-keep as compared with those necessary for wages, service and return on the investment.

[illegible] consideration. [illegible] modification to provide a fair return on the investment and to the [illegible] insure the permanent integrity of such property and investment.

Assuming a minimum rate of 6.0 percent during the electrical period for a "fair return" to the company in interest, dividends and surplus, it now appears that the rate that would have been earned was 6.85 percent. At 6.85 percent return for all purposes, a total deficit in income of about $27,000,000 would have accumulated up to 1919. (Arrived at by interpolation from Fig. 5).

Assuming 7.0 percent as a "fair return" to the company, the total rate earned should have been 7.85 percent or with [illegible] the accumulated deficit in 1917 would have been about $70,000,000.

Conclusions: From the above may be drawn the following conclusions:

First: That income has been insufficient by about $27,000,000 to provide for reasonably maintaining the physical integrity of the property and investment and give even a minimum "fair return" of 6.0 percent on the net actual investment, if depreciated value is to become the basis for rate making.

Second: That if full appropriations heretofore to a reserve fund and depreciation, the actual returns to the owners of the property would have averaged not 6.85 percent on the net actual investment, (6.15 percent less 1.0%).

Third: That capital expenditures alone have risen to a

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